SEQUENCE LISTING

<110> Fisher, Paul B.

<120> Genes Displaying Enhanced Expression During Cellular Senescence and Terminal Cell Differentiation and Uses Thereof

<130> 0575/56765

<140> WIPO ST. 10/C
<141> 1999-02-03

<160> 50

<170> PatentIn Ver. 2.0

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<213> Homo sapien

<400> 23
cctgttaaaa gctgttcttg ngtgttacat gtaacagaca tggtaaatat ttgtttacag 60
tctttgttta acaaaccatg catttaagtt taagtgaagt caacaaaaag gaaataggtg 120
tatggatatg tgattttgag attaaagtta gtcttaaaat gtaaaaaaaa aaaaaaaaaa 180
aaaaaaaaaa aaaaaaaa 198

<210> 24
<211> 414
<212> DNA
<213> Homo sapien

<400> 24
aattcggcac gagaaaagca gtataactgc ctgacacagc gggattgaac gagagaagaa 60
attgttcgtt attgctcaga aaattcaaac acgcaaagat cttatggata aaactcagaa 120
agtgaaggtg aagaaagaaa cggtgaactc cccagctatt tataaatttc agagtcgtcg 180
aaaacgttga cgtgttatag ataagccttg tcattctgta tcaaaaatct gttgtcgttt 240
tctagtaact tcaaattcca ttactccaaa tggcatggtt ttccggtttg taaccataac 300
taaattgtca gtctgacatt taatgtcttt ctatggacaa cattaaatct ccctcccttc 360
tgtagaanan anannnnaaa aanccnccng gggggggccg ggtccccatt cccc 414

<210> 25
<211> 367
<212> DNA
<213> Homo sapien

<400> 25
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agtgaaggtg aagaaagaaa cggtgaactc cccagctatt tataaatttc agagtcgtcg 180
aaaacgttga cgtgttatag ataagccttg tcattctgta tcaaaaatct gttgtcgttt 240
tctagtaact tcaaattcca ttactccaaa tggcatggtt ttccggtttg taaccataac 300
taaattgtca gtctgacatt taatgtcttt ctatgggaca acattaaatc tccctccctt 360
ctgtaaa 367

<210> 26
<211> 432
<212> DNA
<213> Homo sapien

<400> 26
aattcggcac gaggcagact tgaaacagtt ctgtctgcag aatgctcaac atgacctct 60
gctgactgga gtatcttcaa gtacaaatcc cttcagaccc cagaaagtct gttcctttt 120
gtagtaaaat gaatctttca aaggtttccc aaaccactcc ttatgatcca gtgaatattc 180
aagagagcta catttgaagc ctgtacaaaa gcttatccct gtaacacatg tgccataata 240
tacaaacttc tactttcgtc agtccttaac atctacctct ctgaattttc atgaatttct 300
atttcacaag ggtaattgtt ttatatacac tggcagcagc atacaataaa acttagtatg 360
aaactttaaa aaaaaaaaaa aaaacntcnn ggggggnccc ggancccant tcnccntata 420
gggngnccgn tt 432

<210> 27
<211> 398
<212> DNA
<213> Homo sapien

<400> 27
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aacttcgcaa aatgcctaga tattatccta ctgaagatgt gcctcgaaag ctgttgagcc 120
acggcaaaaa acccttcagt cagcacgtga gaaaactgcg agccagcatt acccccggga 180
ccattctgat catcctcact ggacgccaca ggggcaagag ggtggttttc ctgaagcagc 240
tggctagtgg cttattactt gtgactggac ctctggtcct caatcgantt cctctacnaa 300
gaacacacca gaaatttgtc attgccactt caaccaaaat cgatntcngc antgtannaa 360
atcccaanac atcttactga tgcttacttc aagatgaa 398

<210> 28
<211> 232
<212> DNA
<213> Homo sapien

<400> 28
aattcggcac gagattgtat cggttttata ttacctgttc tgcttcacca ggagatcatg 60
ctgctgtgat actgagtttt ctaaacagca taaggaagac ttgctcccct gtcctatgaa 120
agagaatagt tttggagggg agaagtggga caaaaaagat gcagttttcc tttgtattgg 180
gaaatgtgaa aataaaattg tcaactcttt caaaaaaaaa aaaaaaaaaa aa 232

<210> 29
<211> 539
<212> DNA
<213> Homo sapien

<400> 29
aattcggcac gagcacaacc agaaagtaag gtgttctact tgaaaatgaa aggagattat 60

tttaggtatc tttctgaagt ggcatctgga gacaacaaac aaaccactgt gtcgaactcc 120
cagcaggctt accaggaagc atttgaaatt agtaagaaag aaatgcagcc tacacaccca 180
attcgtcttg gtctggcact aaatttctca gtcttttact atgagattct aaactctcct 240
gaaaaggcct gtagcctggc aaaaacggca tttgatgaag caattgctga attggatacg 300
ctgaatgaag agtcttataa agacagcact ctgatcatgc agttacttag ggacaattca 360
ctctgtggac atcggaaaac cagggagacg aaggagacgc tggggaggga gagaactaat 420
gtttctcgtg ctttgtgatc tgttcagtgt cactctgtac cctcaacata tatcccttgt 480
gcgataaaaa aaaanaaaaa aaaaaccntc ngggggggcc ccggancccn attccccct 539

<210> 30
<211> 568
<212> DNA
<213> Homo sapien

<400> 30
attccaaacc aagtagtgtc tgtcagccct cttaactctg tgcacgccct atttcagtct 60
tttacatttg ttcttctagg gaatgtatgc atctctatat atattttccc tctcaaaacc 120
agaacatcaa cagtgctgtt tctgacactt cagacatccc acgcaaagcc acattgaatt 180
tttgccaaat gaaaaacaca tccacaatca agttctaaga gggtgtcaag tggggaatat 240
taatattgtt tattattcaa aaatttagtt tatnaaangg aancaaaacc nttgaacctt 300
ttttcccnaa aaanaaggaa aatntnntgt ngaccaaggg ncgaacctga atccnccttg 360
aaaaattgtt ntctcagaaa ggaaaagcgc cctccagttc ttttacccca agaatttana 420
aaaatttggt ccaagatttt atatgttcag ttgtttatgt ntaaaaataa ctttctggat 480
tttgtggggg aggaccggaa aaggaaggga gtttattcct atgttataca ntanaaactt 540
ccccnataaa atgccatnga tgggttga 568

<210> 31
<211> 315
<212> DNA
<213> Homo sapien

<220>
<223> Human sapien

<400> 31
aattcggcac gagcagggag ccgctagtga aaatctggca tgaaataagg actaatggcc 60
ccaaaaaagg aggtggctct aagtaaaact gggattggac agtagtggtg catctggtcc 120
ttgccgcctg agagccccag gagacatcgg ctagagtgac catggctatg ctcccgtctg 180
gaagatgcca gcatctggcc tcccactgtt ttcagctgtg tcccccagtc cgtgtctttt 240
tagaatgtga atgatgataa agttgtgaaa taaaggtttc tatctagttt gtaaaaaaaa 300
aaaaaaaaaa aaaaa 315

<210> 32
<211> 458
<212> DNA
<213> Homo sapien

<400> 32

aattcaagga actttacatt gtaagagaaa acaaaacact gcaaaagaag tgtgccgact 60
atcaaataaa tggtgaaatc atctgcaaat gtggccaggc ttggggaaca atgatggtgc 120
acaaaggctt agatttgcct tgtctcaaaa taaggaattt tgtagtggtt ttcaaaaata 180
attcaacaaa gaaacaatac aaaaagtggg tagaattacc tatcacattt cccaatcttg 240
actattcaga atgctgttta tttagtgatg aggattagca cttgattgaa gattctttta 300
aaatactatc agttaaacat ttaatatgat tatgattaat gnattcatta tgctncagac 360
tgacntanga atcantaaaa ngatngtttt actctgcaaa aaaaaaaaaa aacncggggg 420
ggggcccggc cccaatttcc ccttntgggg gggggttt 458

<210> 33
<211> 470
<212> DNA
<213> Homo sapien

<400> 33
aattcttatc ttccagaggc tacaattatt ataatggaca atacttttac ctttgtctct 60
aaagatcaga ttagttttat ttgttcactt acgtgctttg attatcccct ctgaattata 120
gaccgagtct tgttgtttag cctaagagaa gatttatgta gtaatttctt ctcaggtatg 180
gaaccacggt cataactaac atgttggcca gaatagaacc actggttaaa catattttat 240
tcaccattaa gtgatcttta tcaatattct ggattagaca acaaattacc tttctgggtg 300
tttcttgtaa actatactcc tgtttgaatg ttaaactttg ttgctaaagt ttaattttaa 360
gatgtttgaa tgttcagttt atgtatttga actacaataa accaaccctt tttatataaa 420
aaaaaaaaaa aacntcgagg gggggcccgg ccccaattnn ccctataggg 470

<210> 34
<211> 261
<212> DNA
<213> Homo sapien

<400> 34
aattcgaact gtgtgtatgt cagtggaatc aaatcaaaag ccactaacat ggctgtctgt 60
ttcactggac tgtcccattt gctggttaaa aggattgggg cccaaatcct ctggcctagc 120
atttctcagt gtttgctatt cagactgtct aaatacagca tgtgacaagc tgaagaagcc 180
aaatctagca gtcatttctg atttcattat attctccccc tcttcctgct aaaaagacaa 240
aaaacaaaaa aaaaaaaaaa a 261

<210> 35
<211> 309
<212> DNA
<213> Homo sapien

<400> 35
aattcggcac gagctggaca ccaacagtga tggtcagcta gatttctcag aatttcttaa 60
tctgattggt ggcctagcta tggcttgcca tgactccttc ctcaaggctg tcccttccca 120
gaagcggacc tgaggacccc ttggccctgg ccttcaaacc caccccctttt ccttccagcc 180
tttctgtcat catctccaca gcccacccat cccctgagca cactaaccac ctcatgcagg 240
ccccacctgc caatagtaat aaagcaatgt cacttttta aaacatgaaa aaaaaaaaaa 300
aaaaaaaaa 309

<210> 36
<211> 243
<212> DNA
<213> Homo sapien

<400> 36
aattcggntc gagctcgaat aagtttgact tgtgttttat cttaaccacc agatcattcc 60
ttctgtagct caggagagca ccccteccacc ccatttgctc gcagtatcct agaatctttg 120
tgctctcgct gcagttccct ttgggttcca tgttttcctt gttccctccc atgcctagct 180
ggattgcaga gttaagttta tgattatgaa ataaaaacta aataacaaaa aaaaaaaaaa 240
aaa 243

<210> 37
<211> 650
<212> DNA
<213> Homo sapien

<400> 37
aattcggcac gagtaccatt cagcctgaat ttgctagtgt aggctctaaa tcaagtgtag 60
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cacaagcccc ttctggaaag gatgcagaaa agaccccagc agttagcatt tcttgtttag 180
aacttagtaa caatctagag aagaagccca ggaggactaa agctgaaaac atccctgctg 240
ttgtgataga gattaaaaac atgccaaaca aacaacctga atcatctttg tgagtcttga 300
aaaagatgtg atatttgact tttgctttaa actgcaagag gaaaaagact ccactgaaat 360
tctaagtttg ccaagtagtg taattgaagt ccttgtctgg tcacacagtt taattctatt 420
tttgtaagaa cataatggga ctgcataaca gagttctata ttacaatttt gtgattatta 480
gtacagagta cagctatgct gtgactgttt tggaaagcca gttttaacac tatgttacat 540
ttttgnttaa agnaagttaa accttatata acntaatgac atttgatttc tggattttcc 600
catgataaaa aattaggggg gataaataaa aatggttact ggaatttcaa 650

<210> 38
<211> 687
<212> DNA
<213> Homo sapien

<400> 38
gaattcggca cgagattttt ttatttttca ttttcccctt aggcatattt agtatttttc 60
cctcaggcag atcattctga gtgtgcgagt gtgtgtgcac atgttacaaa ggcaactacc 120
atgttaataa aatattcaat ttgaaatcct tttcggtatt tgaattgctt ttgaataatg 180
ttttttatct ggatgtaaca ttgttgcatt agcttttttaa ctttcccaag taattgaata 240
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agcgttcaag tttgtattaa aggaaaggat tagtttgacc ccttcttttg atggttaatg 360
catacatgca gttaaatccc tttatgcaaa tgtgacactg ctttactagg tcttttagtt 420
atttatttat ttttttttt ttgnccantt natttttttan nntaattnct naaacncatt 480
attttttttn aaaataaaaa aacacnatcn tttnttttta ananttaaac cttantaaat 540
ttttcccccn aaaaaaaatc ccntaanntt ttnaatttnt tgaattnaan annaantaaa 600
ccttttttnaa aaccnggcaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 660

aaaaaaaaaa aaaaaaaaaa aaaaaaa 687

<210> 39
<211> 2549
<212> DNA
<213> Homo sapien

<400> 39
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ctatggagta gcgcagggtc tcgagctgtg gccgtggact taggcaacag gaaattagaa 120
atatcttctg gaaagctggc cagatttgca gatggctctg ctgtagtaca gtcaggtgac 180
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gcagtagatg gtgtaaatga gcctgatgtc ctagcaatta atggcgcttc cgtagccctc 480
tcattatcag atattccttg gaatggacct gttggggcag tacgaatagg aataattgat 540
ggagaatatg ttgttaaccc aacaagaaaa gaaatgtctt ctagtacttt aaatttagtg 600
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cagcaggact tttgccatgc tatcaaagtg ggagtgaaat atacccaaca aataattcag 720
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gcaaaatttg ttggacctgg tggctataac ttaaaaaaac ttcaggctga aacaggtgta 1860
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aacatcctac tgccctagga ttagaagttg gccaagaaat tcaggtgaaa tactttggac 2160
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catcatctaa ttctcagtga ttttttttt ttaaagagaa ttctagaatt ctattttgtc 2340
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aatataaata cattttaatt atttgtacta aaatgctcat ttacatgtgc catttttta 2460
attcgagtaa cccatatttg tttaattgta tttacattat aaatcaagaa atatttatta 2520
ttaaaagtaa gtcatttata catcttaga 2549

<210> 40
<211> 649
<212> DNA
<213> Homo sapien

<400> 40
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cattacaggc tgatattaaa ttacctggaa taccaataaa aattgtgatg gaggctattc 120
aacaagcttc agtggcaaaa aaggagatat tacagatcat gaacaaaact atttcaaaac 180
ctcgagcatc tagaaaagaa aatggacctg ttgtagaaac tgttcaggtt ccattatcaa 240
aacgagcaaa atttgttgga cctggtggct ataacttaaa aaaacttcag gctgaaacag 300
gtgtaactat tagtcaggtg gatgaagaaa cgttttgtat ttgcaccaac acccagtgtt 360
atgcatgagg caagaagact tcattactga atctgcaagg atgatcagga gcagcaatta 420
gaatttggag cagtatatac cgccacaata actgaaatca gagatactgg tgtaatggta 480
aaattatatc caaatatgac tgcggtactg cttcataaca cacaacttga taacgaaaga 540
ttaaacatcc tactgcccta ggattagaag ttggccaaga aattcaggtg aaatactttg 600
gactgtgacc cagccgatgg aagaatgagg ctttctcgaa aagtgcttc 649

<210> 41
<211> 638
<212> DNA
<213> mouse

<400> 41
aatggtgaca tggatttcaa aatagccggt acaaataaag gaataactgc attacaggct 60
gatattaagt tacctggagt accaattaaa attataatgg aagccatcca acaagcgtca 120
gtggcaaaga aggagatact gcagataatg aacaaacgat ttcaaaacct cgagcatcaa 180
gaaaagaaaa tggaccagtt gtagaaacag taaaggttcc attatcaaaa cgagcaaaat 240
tcgttgggcc tggtggatat cacttaaaaa aactccaggc tgagacaggt gtaacaatta 300
gtcaggttga tgaagaaacc ttctccatat ttgcaccaac acctactgca atgcatgaag 360
caagagattt cattacagaa atttgcagag atgatcaaga gcaacaatta gaatttggag 420
cagtttatac cgcgacaata actgaaatca gagacactgg agtgatggta aaactgtatc 480
caaacatgac tgcagtgctg cttcataatt cacaacttga ccaacgaaag attaaacatc 540
ccactgccct aggactagag gtggccaaga aattcaggtc aaatactttg gccgtgatcc 600
agctgatgga agaatgaggc tttctcgtaa agtacttc 638

<210> 42
<211> 705
<212> PRT
<213> Homo sapien

<400> 42
Asp Gly Pro Phe Leu Leu Pro Arg Arg Asp Arg Ala Leu Thr Gln Leu
1 5 10 15

Gln Val Arg Ala Leu Trp Ser Ser Ala Gly Ser Arg Ala Val Ala Val
20 25 30

Asp Leu Gly Asn Arg Lys Leu Glu Ile Ser Ser Gly Lys Leu Ala Arg
35 40 45

Phe Ala Asp Gly Ser Ala Val Val Gln Ser Gly Asp Thr Ala Val Met
50 55 60

Val Thr Ala Val Ser Lys Thr Lys Pro Ser Pro Ser Gln Phe Met Pro
65 70 75 80

Leu Val Val Asp Tyr Arg Gln Lys Ala Ala Ala Ala Gly Arg Ile Pro
85 90 95

Thr Asn Tyr Leu Arg Arg Glu Val Gly Thr Ser Asp Lys Glu Ile Leu
100 105 110

Thr Ser Arg Ile Ile Asp Arg Ser Ile Arg Pro Leu Phe Pro Ala Gly
115 120 125

Tyr Phe Tyr Asp Thr Gln Val Leu Cys Asn Leu Leu Ala Val Asp Gly
130 135 140

Val Asn Glu Pro Asp Val Leu Ala Ile Asn Gly Ala Ser Val Ala Leu
145 150 155 160

Ser Leu Ser Asp Ile Pro Trp Asn Gly Pro Val Gly Ala Val Arg Ile
165 170 175

Gly Ile Ile Asp Gly Glu Tyr Val Val Asn Pro Thr Arg Lys Glu Met
180 185 190

Ser Ser Ser Thr Leu Asn Leu Val Val Ala Gly Ala Pro Lys Ser Gln
195 200 205

Ile Val Met Leu Glu Ala Ser Ala Glu Asn Ile Leu Gln Gln Asp Phe
210 215 220

Cys His Ala Ile Lys Val Gly Val Lys Tyr Thr Gln Gln Ile Ile Gln
225 230 235 240

Gly Ile Gln Gln Leu Val Lys Glu Thr Gly Val Thr Lys Arg Thr Pro
245 250 255

Gln Lys Leu Phe Thr Pro Ser Pro Glu Ile Val Lys Tyr Thr His Lys
260 265 270

Leu Ala Met Glu Arg Leu Tyr Ala Val Phe Thr Asp Tyr Glu His Asp
275 280 285

Lys Val Ser Arg Asp Glu Ala Val Asn Lys Ile Arg Leu Asp Thr Glu
290 295 300

Glu Gln Leu Lys Glu Lys Phe Pro Glu Ala Asp Pro Tyr Glu Ile Ile
305 310 315 320

Glu Ser Phe Asn Val Val Ala Lys Glu Val Phe Arg Ser Ile Val Leu
325 330 335

Asn Glu Tyr Lys Arg Cys Asp Gly Arg Asp Leu Thr Ser Leu Arg Asn
340 345 350

Val Ser Cys Glu Val Asp Met Phe Lys Thr Leu His Gly Ser Ala Leu
355 360 365

Phe Gln Arg Gly Gln Thr Gln Val Leu Cys Thr Val Thr Phe Asp Ser
370 375 380

Leu Glu Ser Gly Ile Lys Ser Asp Gln Val Ile Thr Ala Ile Asn Gly
385 390 395 400

Ile Lys Asp Lys Asn Phe Met Leu His Tyr Glu Phe Pro Pro Tyr Ala
405 410 415

Thr Asn Glu Ile Gly Lys Val Thr Gly Leu Asn Arg Arg Glu Leu Gly
420 425 430

His Gly Ala Leu Ala Glu Lys Ala Leu Tyr Pro Val Ile Pro Arg Asp
435 440 445

Phe Pro Phe Thr Ile Arg Val Thr Ser Glu Val Leu Glu Ser Asn Gly
450 455 460

Ser Ser Ser Met Ala Ser Ala Cys Gly Gly Ser Leu Ala Leu Met Asp
465 470 475 480

Ser Gly Val Pro Ile Ser Ser Ala Val Ala Gly Val Ala Ile Gly Leu
485 490 495

Val Thr Lys Thr Asp Pro Glu Lys Gly Glu Ile Glu Asp Tyr Arg Leu
500 505 510

Leu Thr Asp Ile Leu Gly Ile Glu Asp Tyr Asn Gly Asp Met Asp Phe
515 520 525

Lys Ile Ala Gly Thr Asn Lys Gly Ile Thr Ala Leu Gln Ala Asp Ile
530 535 540

Lys Leu Pro Gly Ile Pro Ile Lys Ile Val Met Glu Ala Ile Gln Gln
545 550 555 560

Ala Ser Val Ala Lys Lys Glu Ile Leu Gln Ile Met Asn Lys Thr Ile
565 570 575

Ser Lys Pro Arg Ala Ser Arg Lys Glu Asn Gly Pro Val Val Glu Thr
580 585 590

Val Gln Val Pro Leu Ser Lys Arg Ala Lys Phe Val Gly Pro Gly Gly
595 600 605

Tyr Asn Leu Lys Lys Leu Gln Ala Glu Thr Gly Val Thr Ile Ser Gln
610 615 620

Val Asp Glu Glu Thr Phe Ser Val Phe Ala Pro Thr Pro Ser Val Met
625 630 635 640

His Glu Ala Arg Asp Phe Ile Thr Glu Ile Cys Lys Asp Asp Gln Glu
645 650 655

Gln Gln Leu Glu Phe Gly Ala Val Tyr Thr Ala Thr Ile Thr Glu Ile
660 665 670

Arg Asp Thr Gly Val Met Val Lys Leu Tyr Pro Asn Met Thr Ala Val
675 680 685

Leu Leu His Asn Thr Gln Leu Asp Asn Glu Arg Leu Asn Ile Leu Leu
690 695 700

Pro
705

<210> 43
<211> 665
<212> PRT
<213> Homo sapien

<400> 43
Met Gly Gln Glu Lys His Val Phe Thr Ile Asp Trp Ala Gly Arg Thr
1 5 10 15

Leu Thr Leu Thr Val Asn Tyr Glu Glu Arg Leu Tyr Ala Val Gly Lys

20 25 30

Ile Pro Gly Gly Phe Ile Lys Arg Glu Gly Arg Pro Ser Glu Lys Ala
35 40 45

Val Leu Ala Ser Arg Leu Ile Asp Arg Pro Ile Arg Pro Leu Phe Ala
50 55 60

Asp Gly Phe Arg Asn Glu Val Gln Val Ile Ser Ile Val Met Ser Val
65 70 75 80

Asp Gln Asn Cys Ser Ser Glu Met Ala Ala Met Phe Gly Ser Ser Leu
85 90 95

Ala Leu Ser Val Ser Asp Ile Pro Phe Glu Gly Pro Ile Ala Gly Val
100 105 110

Thr Val Gly Arg Ile Asp Asp Gln Phe Ile Ile Asn Pro Thr Val Asp
115 120 125

Gln Leu Glu Lys Ser Asp Ile Asn Leu Val Val Ala Gly Thr Lys Asp
130 135 140

Ala Ile Asn Met Val Glu Ala Gly Ala Asp Glu Val Pro Glu Glu Ile
145 150 155 160

Met Leu Glu Ala Ile Met Phe Gly His Glu Glu Ile Lys Arg Leu Ile
165 170 175

Ala Phe Gln Glu Glu Ile Val Ala Ala Val Gly Lys Glu Lys Ser Glu
180 185 190

Ile Lys Leu Phe Glu Ile Asp Glu Glu Leu Asn Glu Lys Val Lys Ala
195 200 205

Leu Ala Glu Glu Asp Leu Leu Lys Ala Ile Gln Val His Glu Lys His
210 215 220

Ala Arg Glu Asp Ala Ile Asn Glu Val Lys Asn Ala Val Val Ala Lys
225 230 235 240

Phe Glu Asp Glu Glu His Asp Glu Asp Thr Ile Lys Gln Val Lys Gln
245 250 255

Ile Leu Ser Lys Leu Val Lys Asn Glu Val Arg Arg Leu Ile Thr Glu
260 265 270

Glu Lys Val Arg Pro Asp Gly Arg Gly Val Asp Gln Ile Arg Pro Leu

275 280 285

Ser Ser Glu Val Gly Leu Leu Pro Arg Thr His Gly Ser Gly Leu Phe
290 295 300

Thr Arg Gly Gln Thr Gln Ala Leu Ser Val Cys Thr Leu Gly Ala Leu
305 310 315 320

Gly Asp Val Gln Ile Leu Asp Gly Leu Gly Val Glu Glu Ser Lys Arg
325 330 335

Phe Met His His Tyr Asn Phe Pro Gln Phe Ser Val Gly Glu Thr Gly
340 345 350

Pro Met Arg Gly Pro Gly Arg Arg Glu Ile Gly His Gly Ala Leu Gly
355 360 365

Glu Arg Ala Leu Glu Pro Val Ile Pro Ser Glu Lys Asp Phe Pro Tyr
370 375 380

Thr Val Arg Leu Val Ser Glu Val Leu Glu Ser Asn Gly Ser Thr Ser
385 390 395 400

Gln Ala Ser Ile Cys Ala Ser Thr Leu Ala Met Met Asp Ala Gly Val
405 410 415

Pro Ile Lys Ala Pro Val Ala Gly Ile Ala Met Gly Leu Val Lys Ser
420 425 430

Gly Glu His Tyr Thr Val Leu Thr Asp Ile Gln Gly Met Glu Asp Ala
435 440 445

Leu Gly Asp Met Asp Phe Lys Val Ala Gly Thr Glu Lys Gly Val Thr
450 455 460

Ala Leu Gln Met Asp Ile Lys Ile Glu Gly Leu Ser Arg Glu Ile Leu
465 470 475 480

Glu Glu Ala Leu Gln Gln Ala Lys Lys Gly Arg Met Glu Ile Leu Asn
485 490 495

Ser Met Leu Ala Thr Leu Ser Glu Ser Arg Lys Glu Leu Ser Arg Tyr
500 505 510

Ala Pro Lys Ile Leu Thr Met Thr Ile Asn Pro Asp Lys Ile Arg Asp
515 520 525

Val Ile Gly Pro Ser Gly Lys Gln Ile Asn Lys Ile Ile Glu Glu Thr

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     530                 535                 540

Gly Val Lys Ile Asp Ile Glu Gln Asp Gly Thr Ile Phe Ile Ser Ser
545                 550                 555                 560

Thr Asp Glu Ser Gly Asn Gln Lys Ala Lys Lys Ile Ile Glu Asp Leu
                565                 570                 575

Val Arg Glu Val Glu Val Gly Gln Leu Tyr Leu Gly Lys Val Lys Arg
            580                 585                 590

Ile Glu Lys Phe Gly Ala Phe Val Glu Ile Phe Ser Gly Lys Asp Gly
        595                 600                 605

Leu Val His Ile Ser Glu Leu Ala Leu Glu Arg Val Gly Lys Val Glu
    610                 615                 620

Asp Val Val Lys Ile Gly Asp Glu Ile Leu Val Lys Val Thr Glu Ile
625                 630                 635                 640

Asp Lys Gln Gly Arg Val Asn Leu Ser Arg Lys Ala Val Leu Arg Glu
                645                 650                 655

Glu Lys Glu Lys Glu Glu Gln Gln Ser
            660                 665
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<210> 44
<211> 704
<212> PRT
<213> Homo sapien

<400> 44

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Asp Gly Pro Phe Leu Leu Pro Arg Arg Asp Arg Ala Leu Thr Gln Leu
  1               5                  10                  15

Gln Val Arg Ala Leu Trp Ser Ser Ala Gly Ser Arg Ala Val Ala Val
             20                  25                  30

Asp Leu Gly Asn Arg Lys Leu Glu Ile Ser Ser Gly Lys Leu Ala Arg
         35                  40                  45

Phe Ala Asp Gly Ser Ala Val Val Gln Ser Gly Asp Thr Ala Val Met
     50                  55                  60

Val Thr Ala Val Ser Lys Thr Lys Pro Ser Pro Ser Gln Phe Met Pro
 65                  70                  75                  80
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Leu Val Val Asp Tyr Arg Gln Lys Ala Ala Ala Ala Gly Arg Ile Pro
                  85                  90                  95

Thr Asn Tyr Leu Arg Arg Glu Val Gly Thr Ser Asp Lys Glu Ile Leu
             100                 105                 110

Thr Ser Arg Ile Ile Asp Arg Ser Ile Arg Pro Leu Phe Pro Ala Gly
         115                 120                 125

Tyr Phe Tyr Asp Thr Gln Val Leu Cys Asn Leu Leu Ala Val Asp Gly
     130                 135                 140

Val Asn Glu Pro Asp Val Leu Ala Ile Asn Gly Ala Ser Val Ala Leu
145                 150                 155                 160

Ser Leu Ser Asp Ile Pro Trp Asn Gly Pro Val Gly Val Arg Ile Gly
                 165                 170                 175

Ile Ile Asp Gly Glu Tyr Val Val Asn Pro Thr Arg Lys Glu Met Ser
             180                 185                 190

Ser Ser Thr Leu Asn Leu Val Val Ala Gly Ala Pro Lys Ser Gln Ile
         195                 200                 205

Val Met Leu Glu Ala Ser Ala Glu Asn Ile Leu Gln Gln Asp Phe Cys
     210                 215                 220

His Ala Ile Lys Val Gly Val Lys Tyr Thr Gln Gln Ile Ile Gln Gly
225                 230                 235                 240

Ile Gln Gln Leu Val Lys Glu Thr Gly Val Thr Lys Arg Thr Pro Gln
                 245                 250                 255

Lys Leu Phe Thr Pro Ser Pro Glu Ile Val Lys Tyr Thr His Lys Leu
             260                 265                 270

Ala Met Glu Arg Leu Tyr Ala Val Phe Thr Asp Tyr Glu His Asp Lys
         275                 280                 285

Val Ser Arg Asp Glu Ala Val Asn Lys Ile Arg Leu Asp Thr Glu Glu
     290                 295                 300

Gln Leu Lys Glu Lys Phe Pro Glu Ala Asp Pro Tyr Glu Ile Ile Glu
305                 310                 315                 320

Ser Phe Asn Val Val Ala Lys Glu Val Phe Arg Ser Ile Val Leu Asn
                 325                 330                 335
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Glu Tyr Lys Arg Cys Asp Gly Arg Asp Leu Thr Ser Leu Arg Asn Val
240 345 350

Ser Cys Glu Val Asp Met Phe Lys Thr Leu His Gly Ser Ala Leu Phe
355 360 365

Gln Arg Gly Gln Thr Gln Val Leu Cys Thr Val Thr Phe Asp Ser Leu
370 375 380

Glu Ser Gly Ile Lys Ser Asp Gln Val Ile Thr Ala Ile Asn Gly Ile
385 390 395 400

Lys Asp Lys Asn Phe Met Leu His Tyr Glu Phe Pro Pro Tyr Ala Thr
405 410 415

Asn Glu Ile Gly Lys Val Thr Gly Leu Asn Arg Arg Glu Leu Gly His
420 425 430

Gly Ala Leu Ala Glu Lys Ala Leu Tyr Pro Val Ile Pro Arg Asp Phe
435 440 445

Pro Phe Thr Ile Arg Val Thr Ser Glu Val Leu Glu Ser Asn Gly Ser
450 455 460

Ser Ser Met Ala Ser Ala Cys Gly Gly Ser Leu Ala Leu Met Asp Ser
465 470 475 480

Gly Val Pro Ile Ser Ser Ala Val Ala Gly Val Ala Ile Gly Leu Val
485 490 495

Thr Lys Thr Asp Pro Glu Lys Gly Glu Ile Glu Asp Tyr Arg Leu Leu
500 505 510

Thr Asp Ile Leu Gly Ile Glu Asp Tyr Asn Gly Asp Met Asp Phe Lys
515 520 525

Ile Ala Gly Thr Asn Lys Gly Ile Thr Ala Leu Gln Ala Asp Ile Lys
530 535 540

Leu Pro Gly Ile Pro Ile Lys Ile Val Met Glu Ala Ile Gln Gln Ala
545 550 555 560

Ser Val Ala Lys Lys Glu Ile Leu Gln Ile Met Asn Lys Thr Ile Ser
565 570 575

Lys Pro Arg Ala Ser Arg Lys Glu Asn Gly Pro Val Val Glu Thr Val
580 585 590

Gln Val Pro Leu Ser Lys Arg Ala Lys Phe Val Gly Pro Gly Gly Tyr
595 600 605

Asn Leu Lys Lys Leu Gln Ala Glu Thr Gly Val Thr Ile Ser Gln Val
610 615 620

Asp Glu Glu Thr Phe Ser Val Phe Ala Pro Thr Pro Ser Val Met His
625 630 635 640

Glu Ala Arg Asp Phe Ile Thr Glu Ile Cys Lys Asp Asp Gln Glu Gln
645 650 655

Gln Leu Glu Phe Gly Ala Val Tyr Thr Ala Thr Ile Thr Glu Ile Arg
660 665 670

Asp Thr Gly Val Met Val Lys Leu Tyr Pro Asn Met Thr Ala Val Leu
675 680 685

Leu His Asn Thr Gln Leu Asp Asn Glu Arg Leu Asn Ile Leu Leu Pro
690 695 700

<210> 45
<211> 245
<212> PRT
<213> B subtilis

<400> 45
Asp Arg Leu Gly Leu Ala Ala Gly Gly Asp Thr Ala Val Thr Ala Pro
1 5 10 15

Pro Phe Pro Leu Val Tyr Ala Gly Ile Pro Arg Glu Ser Lys Leu Ser
20 25 30

Arg Ile Asp Arg Ile Arg Pro Leu Phe Gly Gln Val Val Asp Ala Gly
35 40 45

Ser Ala Leu Ser Ser Asp Ile Gly Pro Val Gly Ile Asp Asn Pro Thr
50 55 60

Ser Asn Leu Val Val Ala Gly Lys Ile Met Glu Ala Ala Ala Ile Gly
65 70 75 80

Ile Val Gly Lys Lys Leu Phe Glu Leu Ala Glu Leu Glu Lys Glu Val
85 90 95

Glu Val Arg Ile Glu Arg Asp Gly Arg Arg Ser Glu Val His Gly Ser
100 105 110

Leu Phe Arg Gly Gln Thr Gln Leu Thr Leu Asp Lys Phe Met His Tyr
115 120 125

Phe Pro Glu Gly Gly Arg Arg Glu Gly His Gly Ala Leu Glu Ala Leu
130 135 140

Pro Val Ile Pro Asp Phe Pro Thr Arg Ser Glu Val Leu Glu Ser Asn
145 150 155 160

Gly Ser Ser Ala Ser Cys Leu Ala Met Asp Gly Val Pro Ile Val Ala
165 170 175

Gly Ala Gly Leu Val Glu Tyr Leu Thr Asp Ile Gly Glu Asp Gly Asp
180 185 190

Met Asp Phe Lys Ala Gly Thr Lys Gly Thr Ala Leu Gln Asp Ile Lys
195 200 205

Gly Ile Glu Ala Gln Gln Ala Glu Ile Leu Met Thr Ser Arg Pro Thr
210 215 220

Lys Gly Pro Gly Lys Glu Thr Gly Val Ile Thr Ser Ala Ile Gln Leu
225 230 235 240

Gly Val Lys Leu Glu
245

<210> 46
<211> 47
<212> RNA
<213> Homo sapien

<400> 46
uaauauuuau auauuuauau uuuuaaaaua uuuauuuauu uauuuaa 47

<210> 47
<211> 11
<212> RNA
<213> Homo sapien

<400> 47
uauuuauuua a 11

<210> 48
<211> 33
<212> RNA
<213> Homo sapien

<400> 48
uauuuauuua aauauuuaaa uuuuauauuu aau 33

<210> 49
<211> 62
<212> RNA
<213> Homo sapien

<400> 49
guuuuuaauu uauuuauuaa gauggauucu cagauauuua uauuuuuuau uuuauuuuuu 60
uu 62

<210> 50
<211> 111
<212> RNA
<213> Homo sapien

<400> 50
auuuacaugu gccauuuuuu uaauucgagu aacccauauu uguuuaauug uauuuacauu 60
auaaaucaag aaauauuuau uauuaaaagu aagucauuua uacaucuuag a 111